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BIBLIOGRAPHY OF SOVIET LASER DEVELOPMENTS

No. 2

JULY - DECEMBER 1970

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No. 2, July - December 1970

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Introduction

This bibliography has been compiled by the staff of Informatics Tisco in response to a continuing contractual assignment to monitor current Soviet bloc developments in the quantum electronics field. It is the second of two issues intended to give a comprehensive listing of Soviet publication in laser technology for 1969-1970, and complements the first issue by covering all the non-periodic literature for this interval. This includes over 100 sources comprising institutional transactions, collections of articles, conference proceedings, and monographs dealing with laser developments.

For convenience we have also included in this issue the material from regular periodical sources for July through December, 1970, thus completing the full two-year retroactive coverage through 1970. Beginning with 1971, laser bibliographies will continue to be published on a quarterly basis.

The exploitation philosophy and the organization of entries remain essentially the same as set forth in the first issue. In general the subject categories will vary according to the volume of publication on a particular subject. It is clear, for example, that interest in ruby lasers is dwindling while technology related to chemical and other high-power lasers is getting increasing emphasis, and may warrant a more detailed breakdown in the future.

An indication of the current level of Soviet research effort in lasers is given by the fact that at least two new journals have recently appeared which concentrate on the latest and most sophisticated laser developments in the USSR. The first of these, Kratkiye soobshcheniya po fizike (Brief communications in physics) appeared in 1970, and is a monthly report from the Lebedev Institute in Moscow, where the most significant laser work is being done. The second, Kvantovaya elektronika (Quantum electronics) is an irregular serial which began publication in 1971, and is devoted entirely to laser research of the Lebedev group and others prominent in the field.

To avoid needless repetition, particularly of *Sbornik* (Sb) and *Trudy* (Tr) entries, all frequently cited sources have been abbreviated. The full titles are listed alphabetically in Section IV, giving the complete source name and date of issue. In addition, any entry whose source is not on hand at Informatics Tisco includes a parenthesized reference to an abstract of the

entry in the Soviet Referativnyy zhurnal (Abstracts journal), whenever these were found.

Since monographs are considered of less immediate interest, they have been grouped in a separate section. A complete author index is included at the end.

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SOVIET LASER BIBLIOGRAPHY, JULY--DECEMBER 1970

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I. BASIC RESEARCH

A. SOLID STATE LASERS

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F. COMPONENTS AND ACCESSORIES

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J. COHERENCE

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E. INSTRUMENTATION AND MEASUREMENTS

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F. MATERIALS PROCESSING

1. Nonlinear Surface Processes

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IV. SOURCE ABBREVIATIONS

AiT	- Avtomatika i telemekhanika
APP	- Acta Physica Polonica
DAN ArmSSR	- Akademiya nauk Armyanskoy SSR. Doklady
DAN BSSR	- Akademiya nauk Belorusskoy SSR. Doklady
DAN SSSR	- Akademiya nauk SSSR. Doklady
DAN Uzb	- Akademiya nauk Uzbekskoy SSR. Doklady
DBAN	- Bulgarska akademiya na naukite. Doklady
Dokl 1	- Nauchno-tehnicheskaya konferentsiya po radio-tehnicheskym izmereniyam. Doklady. Tom 2. Novosibirsk, 1969
Dokl 2	- Nauchno-tehnicheskiy seminar. Doklady. Metrologiya v radioelektronike. Tezisy. Moskva, 1970
FAiO	- Akademiya nauk SSSR. Izvestiya. Fizika atmosfery i okeana
FiKhOM	- Fizika i khimiya obrabotki materialov
Fizyka dielektrykow i radiospektroskopija	- Fizyka dielektrykow i radiospektroskopija
FTP	- Fizika i tekhnika poluprovodnikov
FTT	- Fizika tverdogo tela
FZh	- Fiziologicheskiy zhurnal
GiK	- Geodeziya i kartografiya
IAN Arm	- Akademiya nauk Armyanskoy SSR. Izvestiya. Fizika

IAN B - Akademiya nauk Belorusskoy SSR. *Izvestiya. Seriya fiziko-matematicheskikh nauk*

IAN Biol - Akademiya nauk SSSR. *Izvestiya. Seriya biologicheskaya*

IAN Est - Akademiya nauk Estonskoy SSR. *Izvestiya. Fizika, matematika*

IAN Mold - Akademiya nauk Moldavskoy SSR. *Izvestiya. Seriya fiziko-tehnicheskikh i matematicheskikh nauk*

IAN TK - Akademiya nauk SSSR. *Izvestiya. Tekhnicheskaya kibernetika*

IAN Turk - Akademiya nauk Turkmenskoy SSR. *Izvestiya. Seriya fiziko-tehnicheskikh, khimicheskikh i geologicheskikh nauk*

IAN Uzb - Akademiya nauk Uzbekskoy SSR. *Izvestiya. Seriya fiziko-matematicheskikh nauk*

IBAN - Bulgarska akademiya na naukite. *Fizicheski institut. Izvestiya na fizicheskiya institut s ANEB*

I-FZh - *Inzhenerno-fizicheskiy zhurnal*

IiR - *Izobretatel' i ratsionalizator*

IT - *Izmeritel'naya tekhnika*

IVUZ Fiz - *Izvestiya vysshikh uchebnykh zavedeniy. Fizika*

IVUZ Geod - *Izvestiya vysshikh uchebnykh zavedeniy. Geodeziya i aerofotos"yemka*

IVUZ Priboro - *Izvestiya vysshikh uchebnykh zavedeniy. Priborostroyeniye*

IVUZ Radioelektr - *Izvestiya vysshikh uchebnykh zavedeniy. Radioelektronika*

IVUZ. Radiofiz	- Izvestiya vysshikh uchebnykh zavedeniy. Radiofizika
KhVE	- Khimiya vysokikh energiy
KiK	- Kinetika i kataliz
Kristall	- Kristallografiya
KSpF	- Kratkiye soobshcheniya po fizike
MITOM	- Metallovedeniye i termicheskaya obrabotka materialov
NM	- Akademiya nauk SSSR. Izvestiya. Neorganicheskiye materialy
NTO SSSR	- Nauchno-tehnicheskiye obshchestva SSSR
OiS	- Optika i spektroskopiya
OMP	- Optiko-mekhanicheskaya promyshlennost'
Otkr izobr	- Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki
OZh	- Ostat'mologicheskiy zhurnal
PF	- Postupy fiziki
PMTF	- Zhurnal prikladnoy mekhaniki i teoreticheskoy fiziki
PSS	- Physica Status Solidi
PTE	- Prihory i tekhnika eksperimenta
Radiotekh	- Radiotekhnika
RiE	- Radiotekhnika i elektronika
RZhF	- Referativnyy zhurnal. Fizika
RZh Geod	- Referativnyy zhurnal. Geodeziya i aeros"yenika

RZh Metrolog - **Referativnyy zhurnal. Metrologiya i izmeritel'naya tekhnika**

RZh Radiot - **Referativnyy zhurnal. Radiotekhnika**

Sb 1 - **Spektroskopiya atomov i molekul. Sbornik.**
Kiyev, Naukova dumka, 1969

Sb 2 - **Kvantovaya elektronika. Sbornik. Vyp. 3.**
Kiyev, Naukova dumka, 1969

Sb 3 - **Fizika elektronno-dyrochnykh perekhodov i poluprovodnikovykh priborov. Sbornik. Leningrad.**
Izd-vo nauka, 1969

Sb 4 - **Poluprovodnikovyye pribory v tekhniki elektrosvyazi. Sbornik. Moskva, Izd-vo svyaz', 1970**

Sb 5 - **Arsenid galliya. Sbornik. No. 1. Tomsk,**
Tomskiy universitet, 1968

Sb 6 - **Kvantovaya elektronika. Sbornik. Vyp. 4.**
Kiyev, Naukova dumka, 1969

Sb 7 - **Voprosy fiziki kondensirovannogo sostoyaniya.**
Sbornik. Kiyev, Naukova dumka, 1969

Sb 8 - **Problemy peredachi informatsii lazernym izlucheniym. Sbornik. Kiyev, 1969**

Sb 9 - **Fizika gazovykh lazerov. Sbornik. Leningrad,**
Izd-vo Leningradskogo universiteta, 1969

Sb 10 - **Elektronnaya tekhnika. Nauchno-tehnicheskiy sbornik. Gazorazryadnyye pribory**

Sb 11 - **Voprosy teorii atomnykh stolknoveniy. Sbornik.**
Moskva, Atomizdat, 1970

Sb 12 - **Voprosy fiziki nizkotemperaturnoy plazmy.**
Minsk, Izd-vo nauka i tekhnika, 1970

Sb 13 - **Elektronnaya tekhnika. Nauchno-tehnicheskiy sbornik. Elektronika SVCh**

- **Radiofizika i rasprostraneniye elektromagnitnykh voln.** Sbornik. Moskva, 1970
- **Nelineynyye protsessy v optike.** Sbornik. Novosibirsk, Izd-vo nauka, 1970
- **Prikladnaya spektroskopiya.** Sbornik. Tom 1. Moskva, Izd-vo nauka, 1969
- **Antenny.** Sbornik. Moskva, Izd-vo svyaz'
- **AN UkrSSR. Fiziko-tehnicheskiy institut nizkikh temperatur.** Sbornik nauchnykh trudov
- **Nekotoryye voprosy magnitnoy radiospektroskopii i kvantovoy akustiki.** Sbornik. Kazan', 1968
- **Teoreticheskaya i yadernaya fizika.** Sbornik. Dnepropetrovsk, 1970
- **Rostovskiy universitet.** Sbornik. Seriya yestestvennykh i tochnykh nauk. Nauchno-teoreticheskaya konferentsiya aspirantov, no. 10. Materialy. Rostov, 1970
- **Problemy difraktsii i rasprostraneniya voln.** Leningrad, Izd-vo Leningradskogo universiteta
- **Voprosy radioelektroniki.** Seriya tekhnika televideniya
- **Vychislitel'naya tekhnika i yeye primeneniye v inzhenernykh i ekonomicheskikh raschetakh.** Sbornik. Vladiivostok, 1969
- **Mezhdunarodnyy kongress po fotograficheskoy naуke.** Moskva, 1970. Sbornik. Khimiko-fotograficheskaya obrabotka. Vneshtorgizdat
- **Impul'snaya fotometriya.** Sbornik. Leningrad, Izd-vo mashinostroyeniye, 1969
- **Arsenid galliya.** Sbornik. No. 2. Tomsk, Izd-vo Tomskogo universiteta, 1969

- **Sb 28** *Elektronnaya tekhnika. Nauchno-tehnicheskiy sbornik*
- **Sb 29** *Leningrad. Nauchno-issledovatel'skiy institut gidrometeorologicheskogo priborostroyeniya. Informatsionnyye materialy po gidrometeorologicheskim priboram i metodam nablyudeniy. Sbornik*
- **Sb 30** *Radiotekhnika. Respublikanskiy mezhvedomstvenny nauchno-tehnicheskiy sbornik*
- **Sb 31** *Khar'kovskiy gosudarstvenny nauchno-issledovatel'skiy institut metrologii. Sbornik. Moskva, Izd-vo standartov, 1969*
- **Sb 32** *Prikladnaya fotogrammetriya. Leningrad, Izd-vo nauka, 1969*
- **Sb 33** *Inzhenernaya geodeziya. Mezhvedomstvenny respublikanskiy nauchnyy sbornik*
- **Sb 34** *Nauchno-tehnicheskoye soveshchaniye po geodezichesko-marksheyderskym rabotam v stroitel'stve, Moskva, 1969. Sbornik materialy*
- **Sb 35** *Mir glazami molodogo uchenogo. Fizika, matematika, mehanika. Sbornik. Moskva, Izd-vo nauka, 1968*
- **Sb 36** *Poluprovodnikovaya tekhnika i mikroelektronika. Respublikanskiy mezhvedomstvennyy sbornik. No. 4, 1970*
- **Sb 37** *Dvukhfaznyye potoki i voprosy teploobmena. Sbornik. Moskva, Izd-vo nauka, 1970*
- **Sb 38** *Teplosifizicheskiye svoystva nizkotemperaturnoy plazmy. Moskva, Izd-vo nauka, 1970*
- **Sb 39** *Monokrystally, stantsillyatory i organicheskiye lyuminofory. Sbornik. Khar'kov*

Sb. 40 - Mezhdunarodnyy kongress po fotograficheskoy naуke, Moskva, 1970. Sbornik. Neserebryanyye materialy i neobychnyye fotograficheskiye protsessy. Vneshtorgizdat, 1970

Sb. 41 - Mezhdunarodnyy kongress po fotograficheskoy naуke, Moskva 1970. Sbornik. Priroda fotograficheskoy chuvstvitel'nostii. Vneshtorgizdat, 1970

Sb. 42 - AN SSSR. Otdeleniye obshchey i tekhnicheskoy khimii. Komissiya po khimii fotograficheskikh protsessov. Uspekhi nauchnoy fotografii. Tom 15. Leningrad, Izd-vo nauka, 1970

TiEKh - Teoreticheskaya i eksperimental'naya khimiya

TKiT - Tekhnika kino i televideniya

Tr. 1 - Mezhdunarodnaya konferentsiya po fiziki poluprovodnikov, no. 9. Moskva, 23-29 July 1968. Trudy. Vol. 1. Leningrad, Izd-vo nauka, 1969

Tr. 2 - Moskovskiy khimichesko-tehnologicheskiy institut imeni D. I. Mendeleyeva. Trudy. No. 2, 1969

Tr. 3 - AN KazSSR. Astrofizicheskiy institut. Trudy

Tr. 4 - Vsesoyuznyy seminar po voprosam prirody ushireniya spektral'nykh liniy izlucheniya kondensirovannykh aktivnykh sred OKG. 1968. Trudy. Kiyev, 1969

Tr. 5 - Khar'kovskiy nauchno-issledovatelskiy institut metrologii. Trudy. Moskva, 1969

Tr. 6 - Krasnodarskiy gosudarstvennyy pedagogicheskiy institut. Nauchnyye trudy

Tr. 7 - Kazanskiy aviationsionnyy institut. Trudy

Tr. 8 - Dnepropetrovskiy institut inzhenerov zhelezno-dorozhnogo transporta. Trudy

- Vitebskiy tekhnologicheskiy institut legkoy promyshlennosti. Trudy
- Leningradskiy institut tochnoy mekhaniki i optiki. Trudy
- Trudy metrologicheskikh institutov SSSR.
- Novosibirskiy pedagogicheskiy institut. Nauchnyye trudy
- AN SSSR. Fizicheskiy institut imeni P. N. Lebedeva. Trudy. Moskva
- Respublikanskaya konferentsiya po aerogidromekhanike, teploobmenu, i massoobmenu, no. 1. Trudy. Kiyev, Kiyevskiy universitet, 1969
- Ministerstvo svyazi SSSR. Trudy uchebnykh institutov svyazi. Leningrad
- Moskovskiy institut radiotekhniki, elektroniki i avtomatiki. Trudy. Radiotekhnika
- AN SSSR. Soveshchaniya po atmosfernoy optike rabochey gruppy po opticheskoy nestabil'nosti zemnoy atmosfery Astrosoveta AN SSSR. Uzhgorod. 8-10 Oct 1968. Trudy. Atmosfernaya optika. Moskva, Izd-vo nauka, 1970
- Leningradskiy elektrotehnicheskiy institut svyazi. Nauchno-tehnicheskaya konferentsiya. Materialy
- Irkutskiy politekhnicheskiy universitet. Trudy
- Tsentral'naya aerolopicheskaya observatoriya. Trudy
- AN SSSR. Fizicheskiy institut imeni P. N. Lebedeva. Trudy. Moskva. No. 52, 1970
- Leningradskiy politekhnicheskiy institut. Trudy
- Nauchno-issledovatel'skiy institut gidrometeorologicheskogo priborostroyeniya. Trudy. Leningrad. No. 22, 1969

TVT	- Teplofizika vysokikh temperatur
UFN	- Uspekhi fizicheskikh nauk
UFZh	- Ukrainskiy fizicheskiy zhurnal
UNF	- Uspekhi nauchnoy fotografii
VAN	- Akademiya nauk SSSR. Vestnik
VBU	- Belorusskiy universitet. Vestnik
VLU	- Leningradskiy universitet. Vestnik. Fizika, khimiya
VMU	- Moskovskiy universitet. Vestnik. Seriya fizika, astronomiya
Zap 1	- Moskovskiy gosudarstvennyy pedagogicheskiy institut. Uchenyye zapiski
Zap 2	- AN SSSR. Matematicheskiy institut. Leningradskoye otdeleniye. Zapiski nauchnykh seminarov
ZhETF	- Zhurnal eksperimental'noy i teoreticheskoy fiziki
ZhETF PvR	- Pis'ma v Zhurnal eksperimental'noy i teoreticheskoy fiziki
Zh NiP FiK	- Zhurnal nauchnoy i prikladnoy fotografii i kinematografii
ZhPK	- Zhurnal prikladnoy khimii
ZhPS	- Zhurnal prikladnoy spektroskopii
ZhTF	- Zhurnal tekhnicheskoy fiziki
ZhVMMF	- Zhurnal vychislitel'noy matematiki i matematicheskoy fiziki

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